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Tom Beall, Esq.
Corning Incorporated
SP-TI-03-1
Corning, NY 14831

| EXAMINER | |
|---|---|
| QUAN, ELIZABETH S | |
| **ART UNIT** | **PAPER NUMBER** |
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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 09/811,999 | SHA ET AL. |
| | Examin r | Art Unit |
| | Elizabeth Quan | 1743 |

*-- Th MAILING DATE of this communication appears on the cover sheet with th correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *23 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,5-10,14-20 and 37-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-10,14-20 and 37-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5-7, 9, 10, 14, 16, 18 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,096,676 to McPherson et al.

Referring to claims 1, 5-7, 9, 10, 14, 16, 18, McPherson et al. disclose a microplate (12) comprising a frame with a plurality of wells (20,30) formed therein (see FIGS. 1-6; COL. 3, lines 50-52 and 61-68). Each well (20,30) includes a first well (30) and second well (20) (see FIGS. 1-6). The first well (30) has a relatively small reservoir with a substantially concaved or cup-shaped bottom for receiving a protein solution and reagent solution (see FIGS. 1-6; COL. 3, lines 61-67; COL. 4, lines 39-58). The second well (20) has a relatively large reservoir positioned near or adjacent to the relatively small concaved reservoir of the first well (30), such that the first well (30) and second well (20) overlap one another (see FIGS. 1-6; COL. 3, lines 61-68). The second well (20) receives a reagent solution that has a higher concentration than the reagent solution within the first well (30) (see COL. 4, lines 34-58). The protein solution and reagent solution with the first well (20) interact with the reagent solution within the second well (30) vial a vapor diffusion process which enables the formation of protein crystals within the first well (30). The frame (14,14a,14b,16,16a,16b) has a footprint sized to be handled by a robotic

handling system (see FIGS. 1-6; COL. 3, lines 10-14; COL. 4, lines 31-33 and 65-68; COL. 5, lines 1-4). Each well (20,30) is positioned on the frame (14,14a,14b,16,16a,16b) such that a liquid handling system can deposit a sample solution into the first well (30) and a reagent solution into the second well (20) (see FIGS. 1-6; COL. 3, lines 10-14; COL. 4, lines 31-33 and 65-68; COL. 5, lines 1-4). A seal (34) is positioned over the plurality of wells (20,30) (see FIGS. 1-6; COL. 4, lines 3-16). The microplate is manufactured from [redacted] polystyrene (see COL. 3, lines 5-9; COL. 4, lines 17-26 and 58-64). The frame (14,14a,14b,16,16a,16b) and plurality of wells (20,30) form a multi-well high-throughput protein crystallography plate (see FIGS. 1-6; COL. 2, lines 57-61). Therefore, McPherson et al. includes all the limitations of claims 1, 5-7, 9, 10, 14, 16, 18.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5, 6, 8, 14-17, 19, 20, 37-39, 41, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,096,676 to McPherson et al. in view of U.S. Patent No. 5,910,287 to Cassin et al. and/or U.S. Patent No. 6,503,456 to Knebel and/or U.S. Patent No. 6,340,589 to Turner et al. and/or U.S. Patent No. 6,296,673 to Santarsiero et al.

Referring to claims 5, 6, 8, 14-17, 19, 20, 37-39, 41, 42, McPherson et al. do not explicitly disclose a Society of Biomolecular Screening compatible robotic handling system handling a frame. However, Cassin et al. disclose that the footprint of a standard 96-well microtiter plate is 12.7 in length and 8.5 cm in width (see COL. 8, lines 55-57). The generally accepted standard footprint for a standard 96-well microtiter plate for robotics application has a length of 12.77 +/- 0.25 cm and width of 8.55 +/- 0.25 cm (see COL. 8, lines 55-63). These standards are within the ranges of the Society of Biomolecular Screening standards, as stipulated in the immediate application. Knebel also discloses a microplate (1) with a frame (2) that complies with the Society of Biomolecular Screening standards (see COL. 5, lines 22-27). Turner et al. also disclose that standardizing the features of the microplate according to Society of Biomolecular

Screening standards are recommended in the successful deployment of microplates in robotic handling and liquid handling instruments (see COL. 2, lines 8-18). Santarsiero et al. disclose a robotic handling system, including transportation of the microplates and liquid distribution of solutions into the wells of the microplates (see FIGS. 1, 4D, 4E, 4F, 4H, 5A, 5B, 5C, 6; COL. 8, line 67; COLS. 9 and 10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the microplate of McPherson et al. to make the frame with a certain footprint and well positioning that is handled by a Society of Biomolecular Screening compatible robotic handling system as in Cassin et al. and/or Knebel and/or Turner et al. and/or Santarsiero et al. to conform with very well known and accepted standards to ensure the availability of robots that can work with the microplate.

McPherson et al. do not disclose that the frame along with the plurality of wells is made from cyclo-olefin. However, Cassin et al. disclose that at least a portion of a bottom surface of a well of the plate is made from cyclo-olefin or substantially the entire bottom to facilitate ease of manufacture (see COL. 6, lines 35-39). Cyclo-olefin can also be used to form the walls of the plate, which is another way of reducing the inherent fluorescence of the plate (see COL. 6, lines 39-41). Cyclo-olefin may optionally comprise any portion of a plate, including the plate bottom, well walls, inter-well structural members that interconnect the wells, plate sides, plate upper or lower surfaces, as well as plate lids (see COL. 6, lines 42-46). Therefore, it would have been obvious to modify the microplate of McPherson et al. to make the frame from cyclo-olefin as in Cassin et al. to reduce the inherent fluorescence of the plate and facilitate ease of

manufacture to make the entire microplate assembly from cyclo-olefin since the bottom and walls of the plate are made from cyclo-olefin.

1. Claims 1, 5-7, 9, 10, 14, 16, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/00678 to Hol et al. in view of U.S. Patent No. 5,096,676 to McPherson et al.

Referring to claims 1, 5-7, 9, 10, 14, 16, 18, 20, Hol et al. disclose a microplate or high-throughput protein crystallization plate (10) comprising a frame (12) with a plurality of wells (26) formed therein (see ABSTRACT; FIGS. 1 and 2; PAGE 19, lines 1-8). Each well (26) includes a first well (32) with a relatively small reservoir and second well (28) with a relatively large reservoir positioned near the relatively small concaved reservoir of the first well (32) (see FIGS. 1 and 2; PAGE 19, lines 1-8). According to Merriam Webster Collegiate Dictionary, adjacent is defined as not distant or nearby. The first and second wells are near each other not distant from each other; therefore, the first and second wells are adjacent to one another. A channel (30) connects the first and second wells to one another (see FIG. 2; PAGE 19, lines 5 and 6). The frame and plurality of wells is a 96 well high-throughput protein crystallography plate (see FIGS. 1 and 2).

Referring to claims 5, 14, it is noted that the frame of the microplate with a footprint **sized to be handled by a robotic handling system** has not been positively recited. Therefore, the sizing of footprint of the frame to be handled by a robotic handling system is not accorded patentable weight in the claim. The prior art does not have to teach or fairly suggest the frame actually being handled by the robotic handling

system since the prior art teaches the frame with a footprint sized such that it is capable of being handled by a robotic handling system.

Referring to claims 6, 16, it is noted that each well **positioned on the frame such that a liquid handling system can automatically deposit a sample solution into the first well and reagent solution into the second well** has not been positively recited. Therefore, the positioning of each well on the frame such that a liquid handling system can automatically deposit a sample solution into the first well and reagent solution into the second well is not accorded patentable weight in the claim. The prior art does not have to teach or fairly suggest a liquid handling system actually depositing a sample solution into the first well and reagent solution into the second well since the prior art teaches each well positioned such that it is capable of being accessed by a liquid handling system for depositing solutions.

Hol et al. disclose in EXAMPLE 1 that the first well or drop chamber (32) receives two microliters of the crystallization from the second well or central chamber/reservoir (28) (see PAGE 20, lines 8-10). Two microliters of dissolved protein is mixed with the two microliters of crystallization solution in the first well or drop chamber (32), and the crystallization chambers were sealed with Crystal Clear tap (see PAGE 20, lines 10-12). The dissolved protein was made by: 1) adding 1M ammonium hydroxide to a protein slurry until the solution becomes transparent, 2) adjusting the solution to 200 mM sodium chloride by the addition of 5 M sodium chloride stock solution, and 3) adjusting the solution to pH 7.0 by addition of 0.1 M hydrochloric acid (see PAGE 19, lines 29-35; PAGE 20, lines 1-5). The final concentration of protein was

determined to be 30 milligrams per millimeter, which is equivalent to 0.03 gram per milliliter or 3 grams per 100 milliliters or 3% (w/v) protein solution (see PAGE 20, lines 1 and 2). The protein crystallized in solution number 8 of Solution Set III or Table III (see PAGE 9). Solution number 8 is made of 2.0 M $(NH_4)_2SO_4$ or 26.4% (w/v) $(NH_4)_2SO_4$ using the molecular weight 132.1342 grams per mole of $(NH_4)_2SO_4$ (see PAGE 9). Solution number 8 may optionally contain 0.1 M buffer (see PAGE 9; PAGE 14, lines 10-13). In EXAMPLE 2 a protein solution has a concentration of 2% (see PAGE 20, lines 21 and 22). The protein crystallized in solution number 28 of Solution Set III or Table III (see PAGE 10). Solution number 28 is made of 20% (w/v) PEG-8000 (see PAGE 10). Solution number 28 may optionally contain 0.1 M HEPES pH 7.5 (see PAGE 10; PAGE 14, lines 13-15). It is noted that when two microliters of the protein solution is mixed with the two microliters of crystallization solution, the overall solution containing the protein solution and crystallization solution, as well as the protein, the reagents used to create the protein solution, and the added reagent or crystallization solution, would be diluted or have a lesser concentration such that the reagent or crystallization solution added to the protein would have a lower concentration than the original reagent or crystallization solution. Additionally, the specification on page 23, lines 1-5 states that the uneven concentration between the reagent solution in the first well and the reagent solution in the second well drives a natural vapor diffusion process towards equilibrium. Since vapor diffusion process occurs and reaches equilibrium by forming protein crystals in the first well or drop chamber in Hol et al., it would appear the reagents used in Hol et al. have an uneven concentration, where the reagents in second

well has a higher concentration than the reagents in the first well (see PAGE 1, lines 23 and 24; PAGE 2, lines 1 and 2; PAGE 15, lines 5-35; PAGE 16, lines 1-35; PAGE 17, lines 1-35; PAGE 18, lines 1-35).

In Hol et al. it is unclear whether the bottoms of each of the relatively small reservoirs of the first wells are concaved. However, McPherson et al. disclose the relatively small reservoir of the first well (30) with a substantially concaved bottom (see 53-58). The first well (30) can be formed of an optimum size and shape to accommodate the particular protein drop being crystallized (see COL. 4, lines 52-55). When lower surface tension solutions, including protein solutions containing detergents are used, a cup-shaped receptacle or a receptacle with a substantially concaved bottom has proven satisfactory (see COL. 4, lines 55-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the microplate of Hol et al. to make the relatively small reservoir of the first well with a substantially concaved bottom as in McPherson et al. to accommodate the particular protein drop being crystallized when using lower surface tension solutions.

7. Claims 5, 6, 8, 14-17, 19, 20, 37-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/00678 to Hol et al. in view of U.S. Patent No. 5,096,676 to McPherson et al. as applied in claims 1, 5-7, 9, 10, 14, 16, 18, 20 and further in view of U.S. Patent No. 5,910,287 to Cassin et al. and/or U.S. Patent No. 6,503,456 to Knebel and/or U.S. Patent No. 6,340,589 to Turner et al. and/or U.S. Patent No. 6,296,673 to Santarsiero et al.

Referring to claims 5, 6, 8, 14-17, 19, 20, 37-42, Hol et al. in view of McPherson et al. do not explicitly disclose a Society of Biomolecular Screening compatible robotic

handling system handling a frame. However, Cassin et al. disclose that the footprint of a standard 96-well microtiter plate is 12.7 in length and 8.5 cm in width (see COL. 8, lines 55-57). The generally accepted standard footprint for a standard 96-well microtiter plate for robotics application has a length of 12.77 +/- 0.25 cm and width of 8.55 +/- 0.25 cm (see COL. 8, lines 55-63). These standards are within the ranges of the Society of Biomolecular Screening standards, as stipulated in the immediate application. Knebel also discloses a microplate (1) with a frame (2) that complies with the Society of Biomolecular Screening standards (see COL. 5, lines 22-27). Turner et al. also disclose that standardizing the features of the microplate according to Society of Biomolecular Screening standards are recommended in the successful deployment of microplates in robotic handling and liquid handling instruments (see COL. 2, lines 8-18). Santarsiero et al. disclose a robotic handling system, including transportation of the microplates and liquid distribution of solutions into the wells of the microplates (see FIGS. 1, 4D, 4E, 4F, 4H, 5A, 5B, 5C, 6; COL. 8, line 67; COLS. 9 and 10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the microplate of Hol et al. in view of McPherson et al. to make the frame with a certain footprint and well positioning that is handled by a Society of Biomolecular Screening compatible robotic handling system as in Cassin et al. and/or Knebel and/or Turner et al. and/or Santarsiero et al. to conform with very well known and accepted standards to ensure the availability of robots that can work with the microplate.

Hol et al. in view of McPherson et al. do not disclose that the frame along with the plurality of wells is made from cyclo-olefin. However, Cassin et al. disclose that at

least a portion of a bottom surface of a well of the plate is made from cyclo-olefin or substantially the entire bottom to facilitate ease of manufacture (see COL. 6, lines 35-39). Cyclo-olefin can also be used to form the walls of the plate, which is another way of reducing the inherent fluorescence of the plate (see COL. 6, lines 39-41). Cyclo-olefin may optionally comprise any portion of a plate, including the plate bottom, well walls, inter-well structural members that interconnect the wells, plate sides, plate upper or lower surfaces, as well as plate lids (see COL. 6, lines 42-46). Therefore, it would have been obvious to modify the microplate of Hol et al. in view of McPherson et al. to make the frame from cyclo-olefin as in Cassin et al. to reduce the inherent fluorescence of the plate and facilitate ease of manufacture to make the entire microplate assembly from cyclo-olefin since the bottom and walls of the plate are made from cyclo-olefin.

8. Claims 1, 5-7, 9, 10, 14, 16, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (FIGS. 2A-C) in view of U.S. Patent No. 5,096,676 to McPherson et al.

Referring to claims 1, 5-7, 9, 10, 14, 16, 18, 20, Applicant's admitted prior art discloses a microplate (200) comprising a frame (204) with a plurality of wells (202) formed therein (see FIGS. 2A-2C; PAGES 3 and 4). Each well (202) includes a first well and second well (see FIGS. 2A-2C; PAGES 3 and 4). The first well has a relatively small reservoir (216) for receiving a protein solution and reagent solution (see FIGS. 2A-2C; PAGES 3 and 4). The second well has a relatively large reservoir (214) positioned near or adjacent to the relatively small concaved reservoir of the first well, such that the first well and second well overlap one another (see FIGS. 2A-2C; PAGES 3 and 4). The

second well receives a reagent solution that has a higher concentration than the reagent solution within the first well (see FIGS. 2A-2C; PAGES 3 and 4). The protein solution and reagent solution with the first well interact with the reagent solution within the second well via a vapor diffusion process which enables the formation of protein crystals within the first well (see FIGS. 2A-2C; PAGES 3 and 4). The frame (14,14a,14b,16,16a,16b) and plurality of wells (20,30) form a 96 well high-throughput protein crystallography plate (see FIGS. 2A-2C; PAGES 3 and 4).

Referring to claims 5, 14, it is noted that the frame of the microplate with a footprint **sized to be handled by a robotic handling system** has not been positively recited. Therefore, the sizing of footprint of the frame to be handled by a robotic handling system is not accorded patentable weight in the claim. The prior art does not have to teach or fairly suggest the frame actually being handled by the robotic handling system since the prior art teaches the frame with a footprint sized such that it is capable of being handled by a robotic handling system.

Referring to claims 6, 16, it is noted that each well **positioned on the frame such that a liquid handling system can automatically deposit a sample solution into the first well and reagent solution into the second well** has not been positively recited. Therefore, the positioning of each well on the frame such that a liquid handling system can automatically deposit a sample solution into the first well and reagent solution into the second well is not accorded patentable weight in the claim. The prior art does not have to teach or fairly suggest a liquid handling system actually depositing a sample solution into the first well and reagent solution into the second well since the prior art

teaches each well positioned such that it is capable of being accessed by a liquid handling system for depositing solutions.

Applicant's admitted prior art does not disclose that the bottoms of each of the relatively small reservoirs of the first wells are concaved. However, McPherson et al. disclose the relatively small reservoir of the first well (30) with a substantially concaved bottom (see 53-58). The first well (30) can be formed of an optimum size and shape to accommodate the particular protein drop being crystallized (see COL. 4, lines 52-55). When lower surface tension solutions, including protein solutions containing detergents are used, a cup-shaped receptacle or a receptacle with a substantially concaved bottom has proven satisfactory (see COL. 4, lines 55-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the microplate of Applicant's admitted prior art to make the relatively small reservoir of the first well with a substantially concaved bottom as in McPherson et al. to accommodate the particular protein drop being crystallized when using lower surface tension solutions.

Applicant's admitted prior art does not address whether a seal is positioned over the plurality of wells. However, McPherson et al. a seal (34) to seal the wells from the atmosphere making it conducive to the vapor diffusion process for generating crystals (see COL. 4, lines 3-16; COL. 5, lines 5-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the microplate of the Applicant's admitted prior art to include a seal positioned over the plurality of wells as in McPherson et al. to seal the wells from the atmosphere to induce vapor diffusion for generating crystals.

9. Claims 5, 6, 8, 14-17, 19, 20, 37-39, 41, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (FIGS. 2A-2C) in view of U.S. Patent No. 5,096,676 to McPherson et al. as applied in claims 1, 5-7, 9, 10, 14, 16, 18, 20 and further in view of U.S. Patent No. 5,910,287 to Cassin et al. and/or U.S. Patent No. 6,503,456 to Knebel and/or U.S. Patent No. 6,340,589 to Turner et al. and/or U.S. Patent No. 6,296,673 to Santarsiero et al.

Referring to claims 5, 6, 8, 14-17, 19, 20, 37-39, 41, 42, Applicant's admitted prior art in view of McPherson et al. do not explicitly disclose a Society of Biomolecular Screening compatible robotic handling system handling a frame. However, Cassin et al. disclose that the footprint of a standard 96-well microtiter plate is 12.7 in length and 8.5 cm in width (see COL. 8, lines 55-57). The generally accepted standard footprint for a standard 96-well microtiter plate for robotics application has a length of 12.77 +/- 0.25 cm and width of 8.55 +/- 0.25 cm (see COL. 8, lines 55-63). These standards are within the ranges of the Society of Biomolecular Screening standards, as stipulated in the immediate application. Knebel also discloses a microplate (1) with a frame (2) that complies with the Society of Biomolecular Screening standards (see COL. 5, lines 22-27). Turner et al. also disclose that standardizing the features of the microplate according to Society of Biomolecular Screening standards are recommended in the successful deployment of microplates in robotic handling and liquid handling instruments (see COL. 2, lines 8-18). Santarsiero et al. disclose a robotic handling system, including transportation of the microplates and liquid distribution of solutions into the wells of the microplates (see FIGS. 1, 4D, 4E, 4F, 4H, 5A, 5B, 5C, 6; COL. 8, line 67; COLS. 9 and

10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the microplate of Applicant's admitted prior art in view of McPherson et al. to make the frame with a certain footprint and well positioning that is handled by a Society of Biomolecular Screening compatible robotic handling system as in Cassin et al. and/or Knebel and/or Turner et al. and/or Santarsiero et al. to conform with very well known and accepted standards to ensure the availability of robots that can work with the microplate.

Applicant's admitted prior art in view of McPherson et al. do not disclose that the frame along with the plurality of wells is made from cyclo-olefin. However, Cassin et al. disclose that at least a portion of a bottom surface of a well of the plate is made from cyclo-olefin or substantially the entire bottom to facilitate ease of manufacture (see COL. 6, lines 35-39). Cyclo-olefin can also be used to form the walls of the plate, which is another way of reducing the inherent fluorescence of the plate (see COL. 6, lines 39-41). Cyclo-olefin may optionally comprise any portion of a plate, including the plate bottom, well walls, inter-well structural members that interconnect the wells, plate sides, plate upper or lower surfaces, as well as plate lids (see COL. 6, lines 42-46). Therefore, it would have been obvious to modify the microplate of Applicant's admitted prior art in view of McPherson et al. to make the frame from cyclo-olefin as in Cassin et al. to reduce the inherent fluorescence of the plate and facilitate ease of manufacture to make the entire microplate assembly from cyclo-olefin since the bottom and walls of the plate are made from cyclo-olefin.

***Response to Arguments***

10. Applicant's arguments with respect to claims 1, 5-10, 14-20, and 37-42 have been considered but are moot in view of the new ground(s) of rejection.

11. Affidavit is unpersuasive in overcoming the art rejections. Independent claims 1 and 10 are rejected under 35 U.S.C. 102(b), and commercial success patents cannot overcome 102 rejections. The independent claim 37 is rejected under 35 U.S.C. 103(a). The primary reference McPherson et al. disclosed all aspects of claim 37 including the small reservoirs with concaved bottoms, which the co-inventor attributes commercial success, except for making the frame and plurality of wells formed therein from cyclo-olefin. The secondary reference provided strong motivation for the limitation of making the frame and plurality of wells formed therein from cyclo-olefin, which is very well established in the art.

Applicant has not established a nexus between the claimed invention and evidence of commercial success by providing hard evidence. Applicant must show that the claimed features were responsible for the commercial success of the protein plates if the evidence of nonobviousness is to be accorded substantial weight. Objective evidence of nonobvious including commercial success must be commensurate in scope with the claims (*In re* Tiffin, 448 F.2d 791, 171 USPQ 294 (CCPA 1971)). To be commensurate in scope with the claims the commercial success must be due to claimed not unclaimed features. Applicant has not provided hard evidence that the claimed features contributed to the sales of the protein plates, especially since there may be features of the protein plates of Greiner and Corning of Exhibits A and B, respectively, other than that claimed that contributed to the sales. The Corning plate does not state that it uses cyclo-olefin as claimed but an advanced Corning polymer. The Corning plate

also has an optical sealing tape, and the plate and seal are clear, which are not claimed. The Corning plate has certain dimensions, which are not claimed. The Greiner plate is different in structure than the Corning plate and the claimed plate. The Greiner plate has a plurality of wells each with a larger rectangular reservoir and 3 smaller concaved reservoirs, which are not claimed. The Greiner plate and Corning plate, which the co-inventor cited as evidence of commercial success, has many unclaimed features that may have contributed to their sales.

The inventor's opinion of the commercial success or purchaser's reason for buying the product--the small reservoirs with concaved bottoms--is insufficient to demonstrate a nexus between the sales and the claimed invention (*In re Huang*, 100 F.3d 135, 140, 40 USPQ2d 1685, 1690 (Fed. Cir. 1996)). Merely showing that the inventor's and inventor's competition sold protein plates that embodied the invention is not sufficient. There are several factors other than the claimed features that could have contributed to the commercial success of the protein plate and are not pertinent to the issue of nonobviousness. Commercial success may be attributed to extensive advertising and position as a market leader before the introduction of the protein plate (*Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 227 USPQ 766 (Fed. Cir. 1985)). Commercial success could be due to recent changes in related technology or consumer demand (*In re Fielder*, 471 F.2d 690, 176 USPQ 300 (CCPA 1973)). Furthermore, the cited gross sales figures do not show commercial success without information on market share (*Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985) and what sales would normally be expected in the market (*Ex parte Standish*, 10 USPQ2d 1454 (Bd. Pat. App. & Inter. 1988).

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (703) 305-1947. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (703) 308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jill Warden
Supervisory Patent Examiner
Technology Center 1700

Elizabeth Quan
Examiner
Art Unit 1743

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August 7, 2003